



**CALIFORNIA STATE SCIENCE FAIR  
2008 PROJECT SUMMARY**

<b>Name(s)</b> Sarah C. Wyman	<b>Project Number</b> <b>J1534</b>
<b>Project Title</b> <b>SpiSEA: The Search for an Environmentally Friendly Solution to Toxic Paints</b>	
<b>Objectives/Goals</b> Can I use strong food substances to create an all-natural, non-fouling algae repellent for boat bottoms?	
<b>Abstract</b>	
<b>Methods/Materials</b> 1 qt oil based primer paint 4 small cups pencil 19# x 7# x 5/8# MDF plank (baseboard material) 4 wooden mixing tools sharpie 4 small paintbrushes painter's tape paper set of measuring cups ruler/yardstick 1/8# spectra line 1 oz Atomic Brand 'Extra Hot' horseradish sauce q-tips small drill bit 1 oz garlic powder digital camera 4 small metal eyelets 1 oz hot New Mexico red chili powder safety goggles 1 large paintbrush 1 drill	
<b>Results</b> The final results left control at the highest with a top growth average of 100, the chili pepper with the smallest average, 70, the garlic, barely above the chili, with 72, and the horseradish at 96.	
<b>Conclusions/Discussion</b> It seemed at first as if the garlic was going to be one of the sections showing the most growth, but while the other sections were developing over the weeks, the garlic stayed consistent with its original growth status. During the first few weeks, # of the sections were marked 10-20 in degree of growth, but the chili pepper stayed between 0-10. Towards the end the garlic seemed to have virtually the same, or less, growth than the chili pepper, but when a q-tip was used to swab the garlic section, the result showed more growth than when the same procedure was conducted on the chili pepper section. Although this experiment was very successful, it definitely had some errors. Because the parts of the plank painted with substances faced down into the water, it took longer for algae to develop through indirect sunlight while the sides directly exposed to sunlight thrived. This could have been solved by securing the plank to the dock so it tilted towards the surface at a slight angle. It is also possible that the results would have been different if a surface curved like a boat hull had been used. I should also have had a section on my plank with toxic paint so that I could compare and contrast this section with the other sections on my plank. Because oceans and harbors all over the world are different and the water conditions, pollution, weather, and salinity vary it is difficult to get the same exact result twice. Because both the chili and the garlic both showed less growth than the control, there is still hope for a solution to the growing worldwide problem of toxic boat bottom paints.	
<b>Summary Statement</b> Chili pepper can be used to create an environmentally friendly alternative to toxic boat bottom paints.	
<b>Help Received</b> Father helped construct plank	