



**CALIFORNIA STATE SCIENCE FAIR  
2017 PROJECT SUMMARY**

<b>Name(s)</b> <b>Roy M. Yaghi</b>	<b>Project Number</b> <b>J2222</b>
<b>Project Title</b> <b>Comparing the Effect of Plastic, Aloe Vera, and Snake Plant on Photosynthesis by Cabomba</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The objective is to see how plastic and Aloe vera and snake plant (both houseplants) affect the rate of photosynthesis on a pondweed called Cabomba caroliniana.</p> <p><b>Methods/Materials</b> The materials used were small pieces of plastic, Aloe vera, and snake plant, sprigs of the pondweed Cabomba, tap water, glass beakers, funnels, and test tubes, Baking Soda, measuring tools and 2 lamps. I placed the Cabomba into a funnel in a beaker with the stem facing upwards. The beaker should be filled with water up to 1 liter, and the test tube on top of the stem of the funnel should also be filled with water. Inside the tunnel, I would either add the plastic, snake plant, or Aloe vera (it matters how the set was labeled, ex: Control: with Snake). The baking soda I sprinkle in the water and the light from the lamps allow the Cabomba to photosynthesize by releasing oxygen bubbles that are stored in the test tube and that can be measured.</p> <p><b>Results</b> The objective of the experiment was to see if plastic has an adverse effect on the rate of photosynthesis by Cabomba. The other idea that was tested was to see if snake plant and Aloe vera resulted in an increase in the oxygen production. Results indicated that Cabomba with snake plant produced the most oxygen (2.5 cm), followed by only Cabomba (2.4 cm), Cabomba with Aloe and Cabomba with Aloe and plastic (2 cm), Cabomba with plastic (1.8 cm) and Cabomba with snake plant and plastic (1.6 cm). The results of my experiment proved that my hypothesis was partially correct. I was correct when stating that plastic will decrease the rate of photosynthesis and Aloe and snake plant will increase it, but I was wrong when I said that Aloe will increase it more than snake plant. Snake plant alone with Cabomba produced the most oxygen.</p> <p><b>Conclusions/Discussion</b> Plastic does negatively affect the marine life, and in this case a pondweed. The houseplants helped by releasing oxygen and tacking in some toxins, and snake plant produced more oxygen than Aloe vera. I hope that this project would allow people to be more aware of how bad plastic really is, and how they could buy houseplants to help purify the air and release oxygen.</p>	
<b>Summary Statement</b> Comparing the effect of plastic, Aloe vera, and snake plant on Cabomba's rate of photosynthesis.	
<b>Help Received</b> I performed, set up, and thought of the experiment alone. My science teacher Mrs. Satya gave me some advice and instructions on the board.	