



**CALIFORNIA SCIENCE & ENGINEERING FAIR
2019 PROJECT SUMMARY**

Name(s) Maya Chakraverty	Project Number J1804
Project Title Studying Effects of Increased CO2 On Plant Biomass	
<p style="text-align: center;">Abstract</p> <p>Objectives Goal is to study the effects of increased carbon dioxide on the plant bio mass. Also, study from prior experiments what relation this may have due to increased CO2 in the environment on quality of the plant and photosynthesis process.</p> <p>Methods</p> <ol style="list-style-type: none">1) Two plants for intervention group that was given increased CO22) Two plants for control group that did not received additional CO23) Half gallon milk carton (containing yeast, warm water, sugar- to release CO2)4) Bottle of water (to show CO2 production via bubbles in the water)5) Flexible tubes6) Measuring scale in ounces7) Dropper for watering the plants8) Old fish aquarium to store the intervention group plants <p>Results The small scale field experiment I conducted showed the two plants kept in the excess CO2 chamber to have an increase in their biomass, as compared to plants that were kept outside the CO2 chamber. There was an impact on biomass and height of the intervention group plants.</p> <p>Conclusions Conclusion: There appears to be sufficient preliminary evidence of a non-zero effect on plants in an environment of higher CO2. the small scale "chamber" experiment conducted over the past few weeks indicates that higher CO2 levels on plants under certain conditions have a non-zero effect, in this case resulting in a greater biomass than the control group plants that continued in the typical setting with relatively less CO2 (the chamber was provided/injected with excess CO2 as an exhaust from a carbon rich fluid being broken down by active dry yeast, producing visible amounts of CO2).</p> <p>It is generally accepted scientific phenomena that plants produce "food" or "energy" from photosynthesis, among other methods. Photosynthesis happens mostly in the leaf biology where CO2, sunlight and many other fluids within the plant result in generation of a form of glucose. With increased amounts of CO2, the plant has more fuel for continued photosynthesis which can result in more "food" or "energy" production, that ultimately adds to the total biomass.</p>	
Summary Statement Effects of increasing Carbon dioxide on plant life	
Help Received Benicia Middle School	