



**CALIFORNIA STATE SCIENCE FAIR
2002 PROJECT SUMMARY**

Name(s) Anthony L. Merz	Project Number J1619
Project Title The Effects of CO(2) on Coleus Plant Growth	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals My project was to determine if Carbon dioxide affects the growth of Coleus plant growth.</p> <p>Methods/Materials Materials: 12 plant packs, 6 plants per pack, a total of 96 Coleus; Duct tape; Sealing Caulk; Caulk gun; 22 cups of water; 4 large, clear, plastic storage boxes; Dry ice; Three Pie Tin Pans; A pen; 1 scale that measures mass in grams.</p> <p>Procedure: First collect all the needed materials. Then place one pie pan with 3 cups of water in it onto three of the four the storage box lids. Take 4 packs of Coleus plants and place them around the pan on each of the four box lids. Caulk the ridges of all four box lids. Then put a 1400mg block if dry ice into the first lid with pan of water and put the lock the box into the lid and label 350ppm. After that put a 1800mg block if dry ice into the second pan of water on the second lid and put the lock the box into the lid and label 450ppm. Then place a 2200mg block if dry ice into the third pan of water and put the lock the box into the lid and label 550ppm. Place the lid of the last box and lock the box into the lid and label Room Air. Place all the boxes in a sunny place and observe daily then record in science log.</p> <p>Results The plants grown in 550ppm of CO₂ died. The plants grown in the environment with 450ppm also died. The plants grown in 350ppm grew some leaves until the end of testing when some leaves started dieing. The plants grown in Room Air grew the best. The leaves did not die.</p> <p>Conclusions/Discussion CO₂ does affect the way Coleus plants grow. Based on the results of this experiment, it appears that the higher the CO₂ level the worse the Coleus grew. In the 350ppm of CO₂ the plants were healthy and grew some, however at the end of the testing they started to wilt and die. The 450ppm of CO₂ started to wilt on the tenth day of testing, and the plants died. The 550ppm of CO₂ was the worst of all four tests. On the ninth day of testing the leaves started to wilt, and the plants died during testing. The Room Air environment grew and looked healthy. Ten days before the testing was over same leaves wilted. Therefore the hypothesis was not supported.</p>	
Summary Statement The experiment #The effect of CO ₂ on Coleus growth# attempted to determine if Coleus grew better with more carbon dioxide than normal.	
Help Received Father helped designed test box.	