



CALIFORNIA SCIENCE & ENGINEERING FAIR 2019 PROJECT SUMMARY

Name(s) Lucia Khuu	Project Number J1814
Project Title Plant Life on Mars?	
<p style="text-align: center;">Abstract</p> <p>Objectives The objective of this study is to measure the growth rates of broccoli plants in Mars Simulant soil with and without steer manure fertilizer as compared to broccoli plants grown in earth soil with and without steer manure fertilizer. All plants are given enough water.</p> <p>Methods Mojave Mars Simulant soil, earth roadside soil, steer manure fertilizer, broccoli seeds, portable greenhouse, plastic cups, ruler, camera. Compared the growth rates of broccoli plants grown in 4 types of soil (earth soil, earth soil with fertilizer, Mars Simulant soil, Mars Simulant soil with fertilizer) over a period of 27 days.</p> <p>Results As measured by plant height, broccoli plants grew best in earth soil with fertilizer, second best in Mars Simulant soil with fertilizer, third best in earth soil without fertilizer and barely grew (or not at all) in Mars Simulant soil without fertilizer.</p> <p>Conclusions Earth food plants (especially broccoli) may be able to grow in Martian Simulant soil if given enough manure fertilizer. If humans were to colonize Mars, they probably will not be able to grow enough food to eat because they will not be able to produce enough manure.</p>	
Summary Statement I showed that food plants possibly can grow on Mars with enough manure fertilizer, but future human Mars colonists may not be able to produce enough manure to grow enough food to eat.	
Help Received None. I designed and conducted the experiment without help from any scientific professionals or institutions.	