



**CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY**

Name(s) Hannah R. Dam	Project Number S2206
Project Title Can Rubbing Sunscreen on a Plant's Leaves Kill the Plant?	
Abstract Objectives/Goals To determine whether sunscreen actually blocks out all the photons from entering the leaves. Methods/Materials Used 16 arugula plants in total with 4 in each group. For 3 out of the four groups, the brand of organic chemical sunscreen was changed and the last group is the control group. Grew the plants, outside, from seed for 2 weeks and then for the next 3 weeks sunscreensed the plants every other day. Weighed the mass of the leaves to compare the growth of each plant and group. Results All 12 plants with the organic sunscreen applied to them died slowly over the three weeks. Conclusions/Discussion Due to the organic sunscreensed plants gradually turning yellow and weak, a chlorophyll deficiency was indicated and a photon blockage that prevented photosynthesis can be concluded. Since the only factor of the plants' death was a nutrient deficiency from the sun, organic chemical sunscreen with zinc oxide should not be harmful to a human's skin and therefore should be used rather than artificial chemical sunscreens.	
Summary Statement I tested the effects of organic sunscreen with the main ingredient of zinc oxide on plants to show the relative chemical safety of organic sunscreen on human skin.	
Help Received None. I built, planted, designed, and conducted the experiment on my own.	