



**CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY**

Name(s) Amara J. Kelley	Project Number J1120
Project Title Is Growing Food Wasting Water?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals My objective is to use my previous knowledge of hydrophobic & hydrophilic properties to simulate a new farming technology called Film Farming that is supposed to maximize water efficiency. I will compare the water usage to traditional methods to determine how much, if any, increase in watering efficiency is gained.</p> <p>Methods/Materials Materials: 12 similarly sized lettuce starts, 4 plastic propagation trays and plastic covers, hydrophilic polymer granules, peat based soil medium, measuring cup for water, digital thermometer/hygrometer, liquid plant nutrient, enclosed shelf with lighting. Method: Separated the 12 plants into 4 trays, with each tray using a different farming method. Tracked water usage and growth over the course of 4 weeks.</p> <p>Results Even though the tray with only soil and water had the 2nd highest growth, it used the most water - this was my control tray. The method that showed the most water efficiency plus growth was the simulated film farming with a plastic cover. It had the highest growth AND used 33% less water than the control tray. The other two trays farming methods both saved more water overall than the tray with only soil and water, but their growth was not as dramatic.</p> <p>Conclusions/Discussion Crop covering and moderated drip irrigation are currently methods used by farmers to save more water and make food production as cost efficient as possible. It is expensive for them to invest in cutting edge irrigation technology like Film Farming. The results of my experiment confirmed my hypothesis that I could use a combination of hydrophobic and hydrophilic materials to create a simulated version of Film Farming that would save more water than strictly traditional farming methods and might be more cost effective.</p>	
Summary Statement I showed that it is possible for farmers to conserve additional water by utilizing non-traditional materials and methods.	
Help Received	