



**CALIFORNIA SCIENCE & ENGINEERING FAIR  
2018 PROJECT SUMMARY**

<b>Name(s)</b> Alexa G. Brent	<b>Project Number</b> 38754
<b>Project Title</b> A Comparison of Arugula Growth between Aquaponics and Soil	
<b>Abstract</b> <b>Objectives/Goals</b> The objective of this study is to compare the difference in height between arugula grown using a traditional soil system and an aquaponic system. <b>Methods/Materials</b> 2 plastic containers, potting soil, aquarium gravel, fish tank, 3 Comet Goldfish, water pump/appropriate tubing, arugula seeds. Used the water pump, gravel, fish tank, and one plastic container to create an aquaponic system employing a draining and pumping method. Used one plastic container and potting soil, watered regularly, to create a traditional soil system. <b>Results</b> The arugula grown in the soil system grew taller than the arugula in the aquaponic system. When plants in both systems had sprouted and surpassed 5 centimeters in height, the plants in the aquaponic system were 0.2 centimeters taller, but the tallest plant of the soil system then grew to be at most 0.5 centimeters taller. <b>Conclusions/Discussion</b> Although certain environmental factors could have impacted the results of the experiment unfavorably, the plants did grow taller in the soil system as opposed to the aquaponic system. This means commercial farmers would supposedly produce larger crops by using their current soil method.	
<b>Summary Statement</b> I found that a traditional soil method produces taller arugula plants than an aquaponics system.	
<b>Help Received</b> None. I designed the systems, built them, and took measurements for the project myself.	