



**CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY**

Name(s) Chloe E. Millar	Project Number J2313
Project Title Composting with Black Soldier Fly Larva: Feeding Black Soldier Fly Larvae Various Foods in Self Harvesting Bins	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals In this experiment I was testing whether different foods fed to Black soldier fly larvae in my custom designed self-harvesting bins affect the health and production rate of the larva. The goal of this experiment was to see which food would be a good starter food for someone just starting their bins, also figuring out if my bins work for the self harvesting that is their purpose. Also, due to the growing consumption of seafood in the United States, fish farms have needed to raise in number, and the bigger fish are fed with food made of anchovies, but we could be feeding them with BSFL (black soldier fly larvae) instead.</p> <p>Methods/Materials 4 long, short bins, plastic netting, cardboard, sandpaper, black soldier fly larvae, eco earth dirt bedding, 4 foods. Cut out the interior leaving two inches around the perimeter on the bin#s lid. Cut the piece of plastic from the lid in half to use as ramps. Use the plastic netting to cover the hole in the lid using duck tape. Glue sandpaper to the plastic ramps to make grippable. Make a triangle out of cardboard to place inside of the bin as a ramp support, then glue the piece of sandpapered plastic to the triangle to finish the ramp, which should be placed to leave # of the bin clear. In the # of clear bin, put your eco earth bedding, grubs, and foods in each bin and record daily how many grubs crawl up the ramp into the ¼ of the bin used for self-harvesting.</p> <p>Results Bin A, carrots had 1, Bin B, Potatoes, had 2, Bin C, green beans, had 18, and Bin D, pear, had 6. This pertains to my objective by showing most efficient food to feed your new grubs is green beans, or for the fastest fish food marketing, you would want to feed the grubs green beans to boost growth.</p> <p>Conclusions/Discussion Due to growing consumption of seafood in the U.S. we are eating more fish, fish farms are growing in number, the fish food is made of smaller fish, like anchovies. BSFL are much cheaper, reproduce 10 times as fast. My project showed what to feed BSFL to boost production rates the most, enlarging fish production. Now we have a new design for a BSF self-harvesting bin, the only commercial bin is 100+ dollars. My bin can be used indoors, it can be used in climates unfit for the insects.. In conclusion my experiment proves which foods are most beneficial to BSFL, overall benefiting our knowledge about food sources for BSFL, my bins are a new way to farm BSFL.</p>	
Summary Statement In my project I tested feeding black soldier fly larva various food scraps in my custom designed self-harvesting bins, I found that the fastest larvae producing food was green beans.	
Help Received I used blacksoldierflyblog to research my topic. Devin Avey (a teacher at my school) gave me final advice on my abstract, and my grandpa helped me to cut out the center because I do not have the physical strength to do so.	