



CALIFORNIA SCIENCE & ENGINEERING FAIR 2019 PROJECT SUMMARY

Name(s) Wahida Rahman	Project Number J1128
Project Title Using Waxworms (<i>Galleria mellonella</i>) to Reduce the Amount of Household Wastes in Our Landfills and Oceans	
<p style="text-align: center;">Abstract</p> <p>Objectives The objective of this experiment was to use Waxworms to biodegrade different types of plastic and household waste. It lowers the amount of time it takes for plastic to biodegrade on its own and the risks to human and wildlife. The hypothesis was If different types of household wastes like Styrofoam, plastic bottles, LDPE bags, aluminum foil, plastic wrap, plastic bags, and paper are fed to waxworms, then they will feed on the plastic bags the most because they are thin and easy to chew .</p> <p>Methods The materials used in this experiment were waxworms, different household wastes, an online ruler, a pencil, condiment containers, fish tanks, and oatmeal. The worms were divided into 105 groups of five in condiment containers with 2.54 x 2.54 cm pieces of household wastes (polystyrene, polyethylene, polyethylene terephthalate, polyvinyl chloride, aluminum, and paper). The amount consumed was measured after 72 hours using an online ruler as a guide.</p> <p>Results The Waxworms ate an average of 0.42 cm of the plastic bags, 0.371 cm of paper, 0.347 cm of plastic wrap, 0.132 cm of LDPE bags, 0.014 cm of Styrofoam, 0.012 cm of aluminum foil, and 0.002 cm of plastic bottles. The initial and final weight of the pieces were also recorded. The hypothesis was proved to be correct. Possible errors could have occurred due to the chemical treatment done to prevent pupation and in measurement of the amount eaten.</p> <p>Conclusions In the future, untreated waxworms will be tested and observed over a period of several days. To collect more sensible data I also weighed the 2.5 x 2.5 cm pieces of waste to make another, more detailed graph.</p>	
Summary Statement I used Waxworms to reduce the volume and mass of waste to help humans, animals, and the environment to get rid of hazardous elements.	
Help Received None, I completed the entire experiment on my own, after some proper internet research on my topic.	