



CALIFORNIA SCIENCE & ENGINEERING FAIR

2018 PROJECT SUMMARY

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Project Title Is It Really Biodegradable?	
<div>Objectives/Goals The objective of this experiment is to determine whether or not a specific type of biodegradable plastic eating utensil can begin to biodegrade within a limited amount of time with one additional element (besides water, soil and microorganisms) and to discover which additional element heat or worms (which primarily provide aeration), will affect the decomposition of the utensil most.</div> <div>Abstract The utensils are placed in each planter and data is collected daily. Once a week each spoon is measured in weight and visually examined for any changes.</div> <div>Methods/Materials 3 planters (about 6 liters each), 13 liters of soil, 3 biodegradable eating utensils (heavy duty corn starch), infrared heat lamp, water, thermometer, milligram scale, Red Wiggler worms</div> <div>Results All of the utensils increased in weight. The biodegradable plastic eating utensil in the heated planter had the most changes visually and in terms of weight. The utensil in the control planter and the planter with worms increased slightly in weight but had no visible changes in appearance.</div> <div>Conclusions/Discussion Although there were various limitations in this experiment that could have altered the outcome, such as the duration of the experiment, the brand of biodegradable eating utensil used, the temperatures of the soil, and the type of worms used (for aeration), the data suggests that this utensil advertised as biodegradable cannot decompose with only two elements (water and heat or water and worms) instead of all three. Whether or not this same utensil could potentially decompose at home using water, heat, worms and more time is unclear from this research.</div>	
Summary Statement This experiment was designed to determine whether or not a biodegradable plastic eating utensil can really biodegrade.	
Help Received None. I designed, researched and conducted the experiment myself.	