



**CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY**

Name(s) Dominique Aranda	Project Number S1103
Project Title A Test on the Biodegradation of Polystyrene Foam by Mealworms	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals My objective was to test whether polystyrene foam (styrofoam) are able to sustain mealworms as represented by their weight gain or loss, as compared to wheat bran (a common dietary choice). The question I was focusing on was does polystyrene foam allow proper development in mealworms. I hypothesize that the polystyrene foam allows for proper development in a mealworm.</p> <p>Methods/Materials 275 live giant mealworms, digital balance scale, standard styrofoam plates, and wheat bran. I measured the weight gain and weight loss of each individual mealworm before and after consuming styrofoam or wheat bran during a certain time period.</p> <p>Results I compared the weight changes of each food choice to determine a significant change in weight. The results showed that wheat bran and styrofoam were viable choices for the growth and development of the mealworms as both options allowed for significant weight gain.</p> <p>Conclusions/Discussion My experiment was able to support the notion to use mealworms to combat the plastic pollution. It showed that the mealworms gained weight both with the consumption of styrofoam and wheat bran. The mealworms were able to sustain themselves consuming styrofoam, as much or even more so than when consuming wheat bran, thus supporting my hypothesis.</p>	
Summary Statement I studied the effects of styrofoam consumption by mealworms and concluded that mealworms are able to survive without issue.	
Help Received My science teacher, Riccardo Magni, assisted me in analyzing my data and how to interpret it.	