



CALIFORNIA STATE SCIENCE FAIR 2011 PROJECT SUMMARY

Name(s) Kosha H. Patel	Project Number J1723
Project Title Open the Doors of Death	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The goal of the experiment was to determine how radiation emitted from microwave ovens effect mealworms. My hypothesis was that the mealworms that are exposed to greater amounts of radiation from the microwave oven will have the more abnormal growth and development patterns than the mealworms that are exposed to lesser amounts of radiation because the high levels of exposure will cause them to be more affected. If mealworms are affected by radiation from microwave ovens, then humans have a chance of being affected by the leaked radiation, as well.</p> <p>Methods/Materials In order to conduct the experiment, I placed nine mealworms into Container A, nine mealworms into Container B, and nine mealworms into Container C. Then, I kept Containers A, B, and C in a 75 degree F environment and raised the mealworms in a room with 10 grams of food. I measured the mealworms# initial length and then exposed the mealworms in Container B to radiation from microwave oven for 10 minutes and exposed the mealworms in Container C for 15 minutes by placing the containers 17 inches away from the microwave oven every 1 hour for 6 hours, each day. The mealworms in container A were not exposed to radiation at all. Then, I observed how the length of the mealworms in Container A differed from the length of the mealworms in Containers B and C. I measured the mealworms# length every 3 days for 13 days.</p> <p>Results The result of the experiment was that exposure to radiation can stunt the growth of mealworms. While mealworms that were not exposed to radiation leaked from microwave oven ended up growing 6 millimeters over a span of 13 days, the mealworms that were given a mild dose of radiation grew 3.4 millimeters and the mealworms that received the highest dose of radiation grew 2.6 millimeters after 13 days. To sum it up, exposure to radiation caused for the growth rate of mealworms to slow down.</p> <p>Conclusions/Discussion To conclude, the data rejected my hypothesis since I had predicted that the larger the dose of leaked radiation, the faster the growth of the mealworms would be because exposure to radiation is known to mutate cells, so the growth rate would change. Instead, radiation caused the growth rate of the mealworms to slow down. Therefore, exposure to radiation causes the mealworms to grow slower than average.</p>	
Summary Statement My project proves that radiation leaked from microwave ovens affects the length of tenebrio molitors (also known as mealworms) by causing their growth rate to slow down.	
Help Received Ms. Fisher (Science Teacher) helped to review my project, Mrs. Diaz (Language Arts teacher) helped review my research report, and my parents bought my supplies.	