



**CALIFORNIA STATE SCIENCE FAIR  
2004 PROJECT SUMMARY**

<b>Name(s)</b> <b>Miles W. Beal-Ampah</b>	<b>Project Number</b> <b>J1401</b>
<b>Project Title</b> <b>Fruit Fly Fiesta: Effects of Radiation on the Reproduction of <i>Drosophila melanogaster</i></b>	
<b>Objectives/Goals</b> I wanted to see how common forms of radiation would affect the reproduction of fruit flies.	
<b>Abstract</b> <b>Methods/Materials</b> 150 fruit flies were viewed individually under a microscope to identify their sex and separate them to avoid mating before radiation. Fruit flies were exposed to 3 forms of radiation: x-ray (high and low level), microwave, ultraviolet light. 6 pairs of males and females from each group were placed in 2 jars each, plus one additional high level x-ray and 3 norm containers, totaling 10 vials for observation.	
<b>Results</b> Moderate powers of radiation did not affect the reproduction rate of the fruit flies. High powers of x-ray radiation delayed larvae production by 5 days. Ultraviolet light and moderate x-ray specimens were "jumpy" and small. Two norm groups failed to produce larvae; the third norm group produced larvae, but no offspring. These results demonstrated how radiation affected the reproduction of fruit flies.	
<b>Conclusions/Discussion</b> As I suspected, microwave and ultraviolet groups produced normal offspring amounts. This result supported my view that radiation flows outside microwave ovens because air that carries radiation rays is pushed out while it heats whatever is inside. Surprisingly, offspring from the ultraviolet and moderate x-ray groups were smaller and hyperactive, and high-level x-ray radiation larvae production was delayed. I predicted no x-ray group offspring because lead aprons are required to protect reproductive organs during x-rays. Normal reproduction from the non-tampered group was the most foreseeable hypothesis. However, the lack of larvae by two norm groups was possibly because many got trapped in the media, which was apparently too wet. The third norm group, which produced larvae but no offspring, was probably due to the plastic container top (others had foam). My project provided a greater understanding about the impact of radiation exposure. Without adequate protection, radiation exposure can potentially damage reproductive organs or result in small or hyperactive offspring.	
<b>Summary Statement</b> My project is about the effects of radiation (x-ray, UV light, microwave) on the reproduction of fruit flies.	
<b>Help Received</b> Mother helped type some documents and submit electronic application, Dr. Kent (Westside Cat Hospital) and Dr. Himes (Ladera Pet Clinic) provided x-ray facilities, and Julie Poulos assisted in preparing computer graphs	