



**CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY**

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Project Title The Effects of Irradiation on the Shelf Life of Fruit and Meat	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals Irradiation of food offers the possibility of increasing the shelf life of many foods we eat. In this experiment I tested the effects of various doses of irradiation on meat and apples.</p> <p>Methods/Materials The meat and apple samples were placed in test tubes, labeled, and exposed to 250 Rads, 500 Rads, 900 Rads (of irradiation), or no irradiation at all (the control group). After irradiation, some samples were placed in airtight test tubes, and some were placed in open test tubes. Half of the test tubes were then refrigerated, and half left at room temperature. Observations were recorded every five days and after one month the test tubes were evaluated for signs of deterioration.</p> <p>Results After 31 days (one month) at all levels of irradiation, the airtight meat and apple samples showed very few signs of deterioration with generally just slight discoloration as a sign of deterioration. The refrigerated airtight meat and apple samples at all levels of irradiation showed no visible signs of spoilage. The most extreme deterioration occurred in the open test tubes. All samples were dehydrated, with slightly less deterioration in the test tubes with 250 Rads, 500 Rads and 900 Rads of irradiation. All control samples (no irradiation) were quite deteriorated.</p> <p>Conclusions/Discussion Levels of irradiation at 250 Rads, 500 Rads, and 900 Rads seemed to be effective in preserving the food samples for a full month when the food items were refrigerated and tightly capped. Although irradiation seemed to prolong shelf life greatly, much controversy still exists. Scientists continue to investigate whether chemical or cellular changes also occur with the foods that might ultimately do more harm than good.</p>	
Summary Statement This project examines the effectiveness of varying levels of irradiation: 250 Rads, 500 Rads and 900 Rads in preserving meat and apple samples for a full month's time.	
Help Received Palomar Hospital allowed Andrew Polansky to irradiate the food samples.	