



**CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY**

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Project Title
Does Medical Ionized Radiation Affect the Cell Growth of Living Plant Cells?

Abstract

Objectives/Goals
Radiation will effect the cell growth because radiation is a high powered light that can sometimes permanently damage the cell. I think the unexposed will do better because the seed#s cells have not been damaged.

Methods/Materials
Day one I put ten seeds in the irradiation room in front of the beam. I sat ten seeds in the room while the others were being irradiated. For three days seeds were in three pie pans germinating. The pie pans labeled Unexposed, Irradiated, and Exposed. Fourth day I planted the seeds in three egg cartons with one half a cup of soil. I labeled the cartons Unexposed, Irradiated, and Exposed. All ten seeds in every carton were watered and given 16 hours of light everyday. I measured the height of the plants everyday by centimeters.

Results
Day 4 eight irradiated seeds sprouted. Exposed had four sprout. Unexposed had eight sprout. Day 6 they were planted in 1/2 cup of potting soil. Day 8 three of the irradiated came through the soil. None of the exposed and one of the unexposed. Day 9 four of the irradiated had broken through the soil and none of the exposed. A total of two had come through for the unexposed. Day 10 seven of the irradiated had come through the soil. Exposed had two come through and unexposed had seven. Day 11 irradiated measured 8 cm and nine came through. Exposed had five come through the tallest being 5 cm. Unexposed measured 6.5 cm and nine sprouted. Day 12 all the irradiated had come through the soil. Exposed had eight come through and unexposed had ten.
At the end the irradiated had 3 poor growing plants. Six were 11.0 cm tall and all ten sprouted. The exposed had 4 plants that weren#t over 9.0cm tall, 8 of the 9 sprouted. The reason why there was only 9 plants was one didn#t germinate. Unexposed had 2 poor growing, 6 were taller and all ten sprouted

Conclusions/Discussion
My conclusion would be, is worse to be on the outside of the radiation beam than to have direct exposure. My unexposed seeds though slower growing were taller and healthier by the end. I conclude that radiation does effect cell growth.

Summary Statement
Medical ionized radiation can effect cell growth in living plant cells.

Help Received
Don Hess helped irradiate the seeds, Mother typed application, Father helped with wood cutting.