



**CALIFORNIA STATE SCIENCE FAIR  
2017 PROJECT SUMMARY**

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| <b>Name(s)</b><br>Vybhav Upadhyayula  | <b>Project Number</b><br><b>J1927</b> |
| <b>Project Title</b><br><b>The Effect of Irradiation on Radish Plants</b>   |                                       |
| <b>Abstract</b><br><b>Objectives/Goals</b><br>The objective was to determine the effects of 50krads, 150krads, 500krads, and 4000krads versus 0krads of gamma ray exposure on the vertical stem growth and physical appearance (number of leaves, stem thickness, and root length) of radish plants.<br><b>Methods/Materials</b><br>Irradiated radish seeds ordered from a supply company were grown under a 60 watt grow light and were given 75 mL of water every alternative day for 3 weeks. At the end of 3 weeks' recordings of their final vertical stem growth and physical appearance were recorded in the log book.<br><b>Results</b><br>The radish seeds which were exposed to less amounts of radiation had significantly larger stem growth, healthier physical appearance (more leaves, thicker stems, and longer roots). The control which was not exposed to any radiation did the best, the next best was seeds exposed to 50krads, and so on.<br><b>Conclusions/Discussion</b><br>The data recorded exactly reflected the hypothesis. The radish plants infected with more radiation did poor in vertical stem growth and the quantitative physical appearance, as the control averaged the best in both categories. As illustrated, drastic increase in gamma radiation has harmful effects on the radish plants hindering their ability to survive. Further research may include using a protein-hydrogen solution, which acts as a counter-agent to the radiation, to see whether it benefits the plant. Results of this project benefit the farmer population of the world. |                                       |
| <b>Summary Statement</b><br>I found the effects of various amounts of gamma ray exposure on the vertical stem growth and physical appearance of radish plants.  |                                       |
| <b>Help Received</b><br>None. I researched and conducted the experiment myself.   |                                       |