The Effect of Radiation on Phaseolus vulgaris

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Cosmic Ray Detector

Troubleshooting Trials

Time (Hours)	Computer Counts	Module Counts	Mean	Dead Time	Condition
94	7126	9385	8255	25%	Nothing Running. Over Weekend
17.73	1632	1632	1632	0%	Overnight
18.6	1521	2871	2196	47%	Overnight
0.65	20285	20471	20378	1%	Cs-137
0.467	74167	85373	79770	13%	Sr-90

Trigger Efficiency Test

- Started sanding a new scintilator for a third detector to be used to test trigger efficiencies.
- Need to set up circuits to record coincidences throughout the three detectors.
- Need to finish troubleshooting or assigning uncertainties for module/computer discrepancies before beginning this experiment

Updated Radiation Dosages

Distance from Source (cm)	Cesium-137 (mrem/hr)	Cesium-137 through the soil (mrem/hr)	Total Gamma Dose (mrem)	Strontium-90 (mrem/hr)	Total Beta Dose (mrem)
5.00	0.670	0.187	2.01	2.18	13.0
5.59	0.536	0.130	1.60	1.78	5.34
8.00	0.262	0.023	0.861	0.802	2.41
8.94	0.210	0.016	0.678	0.634	1.90

Higher Dosage Experiment

Source	Current Activity	Radioactive Particle Distribution	Radiation 1 cm from source (mrem/hr)	Radiation Through the Soil (mrem/hr)	Total Radiation (mrem)
Cs-137	1.3 µCi	Gamma and Beta	3.679	2.865	111.248
Cs-137	5.92 µCi	Gamma and Beta	16.753	13.047	506.583
Cs-137	1.28 µCi	Gamma and Beta	3.622	2.821	109.531
Am-241	0.09 µCi	Alpha and Gamma	0.013	0.010	0.391
Sr-90	0.1 µCi	Beta	63.575	0	1080.775

Eleven small pots with three plants in each totet higher dosages, for a longer period of time.

Aerogel Tiles & Radiation

- Exposed to:
  - Strontium-90 (beta radiation) since the 11th
  - Cesium-137 (gamma and beta radiation) since the 16th

So far there has been no visible effect, but a transmittance test will take place and the tiles will continue to be exposed to the radiation