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Irradiation Extermination

The Irradiation Exterminator is designed to help solve one of the most pressing problems in our world today, the overwhelming number of people that don't have access to clean water, by purifying contaminated water using ultraviolet light. The Irradiation Exterminator purifies water using a 24 inch long, 16 watt UV-C light bulb. It uses 120 volt AC power. In the future the power source will be solar. Each cleaning cycle takes sixty minutes. In preparation for designing the purifier, the effect of exposure time to an ultraviolet source on the elimination of E. coli was tested. I also tested how the distance from an ultraviolet source affected the elimination of E. coli. The Irradiation Exterminator has also been tested to see how long it takes to purify the water. This was done by exposing an E. coli solution for different time periods. In the first experiments, I found that the closer and longer E. coli is exposed to UV, the more it is eliminated. It took an hour for 99.99% of the E. coli to be eliminated with the purifier. I plan to conduct further testing in order to improve the Irradiation Exterminator, including the testing of glass tubing. In it's current state, the Irradiation Exterminator is a UV-C water purifier that doesn't use very much power. In the future, it will be converted to solar power so that it can be sent to people around the world who suffer from contaminated water.