

The Effect of Wi-Fi on Plant Health

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The purpose of this project was to investigate whether modern technology has damaging effects on the environment. This was tested by putting spider plants into two Faraday cages, with one containing a Wi-Fi router. It was hypothesized that Wi-Fi exposure would have a negative effect on the health of the plants. A baseline test was taken for each plant by measuring the length of the longest leaf and the rate of photosynthesis, as determined by an assay in a 5% sodium bicarbonate solution. The health of the eight plants was evaluated over time by testing the length of the longest leaf and rate of photosynthesis, and adding the z-scores for both measures for each plant to construct a health interval for each time interval. The overall mean health index for plants without Wi-Fi was 0.40, compared to -0.61 for plants exposed to Wi-Fi when measured from the previous test, with a p-value of 0.33, and 0.51 and -0.71 respectively when measured from the baseline, with a p-value of 0.0075. The central tendency shows that the health of the plants in this experiment was greatly decreased when exposed to Wi-Fi. However, the scope of the research could be broadened by testing a variety of plants, lengthening the growing time, and starting from seeds. The project establishes evidence that modern technology may have detrimental effects on the environment. Environmental degradation is occurring rapidly due to human activity, and technology may inhibit the environment's ability to replenish its resources and ecosystems' ability to support its life. This project justifies the need for further research on the consequences of radiofrequency radiation on the environment.

Awards Won:

American Statistical Association: Certificate of Honorable Mention