

Phytoremediation through Mineralization of *Epipremnum aureum* in the Reduction of Benzene and Other Volatile Organic Compounds (VOCs) in Residential Dwellings

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Benzene is a volatile organic compound and a recognized carcinogen linked to leukemia. The Environmental Protection Agency released a statement that claimed exposure to benzene levels above 0.4 ppb over a lifetime could increase one's risk of developing leukemia. The purpose of the study was to determine if placing *Epipremnum aureum*, an air purifier, in residential dwellings would reduce the levels of benzene below 0.4 ppb and the overall levels of other volatile organic compounds (VOCs). This would be a practical and green method to creating a healthier environment that could potentially decrease the rates of leukemia incidences. The twenty-six day study was conducted through the use of a photoionization detector. On day 1, initial readings were performed at every home, inside and outside. This process was repeated twice a week for four weeks. Halfway through the study, the plants were taken out in order to determine the effects of the absence of *E. aureum* on the benzene and VOC levels. On day 22, the plants were placed back in the homes, and on day 26, the final data was collected. Through a correlation coefficient test, the data revealed that the *E. aureum* and the levels of benzene and other VOCs shared a weak to moderate relationship, and was statistically insignificant due to the small sample size. The null hypothesis was accepted as the placement of *E. aureum* in residential dwellings had no effect on the levels of benzene or other VOCs. Further research is necessary.

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