The Study of Aquatic Plants Effect on Polluted Waters

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The purpose of this experiment was to determine if the aquatic plants Lemna minor, Elodea, or Pistia stratiotes affected the levels of nitrates and phosphates in polluted waters. Determining the answer to this question will result in the knowledge of if aquatic plants affect pollutant levels and by knowing that, these aquatic plants could either be added or removed from the environment, causing pollutant levels to decrease for healthier overall water quality. The aquatic plants Lemna minor, Elodea, and Pistia stratiotes were purchased online to begin my experiment. Each of those plants was added to two separate bowls containing a nitrate-phosphate water mixture that had been previously tested for nitrate and phosphate levels before the aquatic plants were added. Once the plants had sat in the polluted water mixture, the nitrate and phosphate levels were tested again to determine the difference in the levels with and without an aquatic plant and gather my data. My data overall showed that the aquatic plant Lemna minor decreased the overall levels of nitrates but the levels of phosphates increased. Next, the aquatic plant Elodea decreased the levels of both nitrates and phosphates. Finally, the aquatic plant Pistia stratiotes decreased the levels of phosphates and nitrates in the polluted water. In conclusion, we now know that a part of these certain aquatic plants are proven to decrease levels of harmful nitrates and phosphates in polluted water.

Awards Won:
Air Force Research Laboratory on behalf of the United States Air Force: Glass trophy and USAF medal for each recipient
Air Force Research Laboratory on behalf of the United States Air Force: First Award of $750 in each Regeneron ISEF Category, FOR 2023 ONLY: EBED WILL HAVE TWO