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The Living Machine

The purpose of this investigation was to discover which aquatic plant (sea wisp, java fern, and vallisneria spiralis) was able to produce the best results in cleaning fertilized-polluted water (pH). I hypothesized that if the type of plant was varied, then the pH level would fluctuate, but the best plant to survive in fluctuating pollution would be the java fern.

This experiment involved testing the pH level of the polluted water with added plants (sea wisp, vallisneria spiralis, and java fern). Water and fertilizer and water alone were the controls. The pH level was tested by an electrical pH tester to test the hydrogen-ions in the water, which make the water either acidic or alkaline. There was 3 trials for each plant and 1 trial for each control.

The data collected did support my original hypothesis. The final daily pH averages of the java fern were 7.31 meaning it was close to a pH balance of 7 unlike the other two plants. Additionally, the data range (average plus and minus random error) for the final pH testing day of all the plants did not overlap as the java fern was 7.28 to 7.34 while the data range for the vallisneria spiralis was 7.44 to 8.68 and the sea wisp at 8.73 to 8.87. Thus, a statistical difference was noticed between the plants.

These findings lead me to conclude that the java fern at the end of 12 days cleans polluted water better than vallisneria spiralis and the sea wisp.