

**PHYTOREMEDIATION POTENTIAL OF KIAPO (*Pistia stratiotes* Linn.)  
IN HEAVY METAL-CONTAMINATED WATER**

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## ABSTRACT

**VINLUAN, YUAN T.**, Department of Environmental Science, College of Science, Central Luzon State University, Science City of Muñoz, Nueva Ecija, Philippines, **July 2023, PHYTOREMEDIATION POTENTIAL OF KIAPO (*Pistia stratiotes* Linn.) IN HEAVY METAL-CONTAMINATED WATER**

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Phytoremediation has become a sustainable and affordable method for cleaning up water contaminated with heavy metals. The Kiapo plant (*Pistia stratiotes* Linn.) showed great promise for this study due to its remarkable ability to absorb and store heavy metals. It demonstrated a high tolerance for these contaminants and effectively removed significant amounts of them. Kiapo plant offers a viable solution for remediating heavy metal-contaminated water.

This study aimed to explore the potential of Kiapo as a phytoremediation tool, specifically for heavy metal-contaminated water. The objectives were to assess the presence and levels of Copper, Nickel, and Mercury in the polluted water and evaluate how effectively Kiapo could remove these heavy metals. Kiapo plant samples were collected from Ladies Dorm 4 at Central Luzon State University and cultivated in a controlled environment. The concentration of heavy metals in the water was measured before and after the plants were introduced. The experiment was conducted from February to April of 2023.

The findings revealed that Kiapo showed significant potential for phytoremediation. The plant successfully eliminated heavy metals like Copper (Cu), Nickel (Ni), and Mercury (Hg) from the contaminated water. The effectiveness of Kiapo

in removing these metals depended on several factors, including the initial concentration of heavy metals in the water. Based on these results, it can be concluded that Kiapo holds great promise as a phytoremediation agent for heavy metal-contaminated water.

The plant's ability to accumulate heavy metals in its tissues explains its effectiveness in their removal. This study offers valuable insights for developing a cost-effective and environmentally friendly approach to remediating heavy metal-contaminated water. Overall, this study contributes to the growing knowledge base on phytoremediation and highlights the potential of Kiapo as a natural solution to water pollution caused by heavy metals. It can serve as a foundation for future studies on the subject and prove useful for policymakers, researchers, and stakeholders in the field of environmental science and technology.

Keywords: Phytoremediation; Potential; Heavy Metal-Contaminated Water; Kiapo (*Pistia stratiotes* Linn.)

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