Environmental Engineering and Management Journal xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
http://www.eemj.icpm.tuiasi.ro/; http://www.eemj.eu

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REDUCTION OF HEAVY METALS (CR, CU, AND PB) LEVEL AND MIXED AQUATIC PLANTS (*HYDRILLA VERTICILLATA* AND *SALVINIA MOLESTA*) DUE TO THE RESULT OF BATIK TEXTILE INDUSTRY LIQUID WASTE IN EAST JAVA

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Abstract

In Indonesia, the batik textile industry grows so rapidly that it is able to improve the economy, especially on home industry scale. However, a production that uses chemicals always produces waste, especially in batik production which produces heavy metal waste such as Cr, Cu, and Pb. This research aimed to evaluate the change in heavy metal level in batik textile industry before and after remediation using *Hydrilla verticillata* and *Salvinia molesta* plants. This research is carried out by using an experimental method with Completely Randomized Design (CRD). The parameter of waste tested in this research is Heavy Metal Cr, Cu, and Pb and supporting parameters of pH and temperature observation. It was repeated 3 times, then the data used to calculate the effectiveness of removal and the statistic test including data of Cr, Cu, Pb levels and the plant weight. The result of the research showed that phytoremediation of liquid water in the textile industry by using *Hydrilla verticillata* and *Salvinia molesta* plants can reduce Cr, Cu, and Pb metal concentration. *Hydrilla verticillata* plant was able to reduce Cr metal concentration by 31%, Cu metal concentration by 33.6%, and Pb metal concentration by 61%. *Salvinia molesta* plant was able to reduce the concentration of Cr metal by 91.9%, the concentration of Cu metal by 60%, but the Pb concentration increased by 22% from the initial concentration.

Key words: home industry, organic content, phytoremediation

Received: January, 2024; Revised final: November, 2024; Accepted: January, 2025

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