

The Possible Reduction of Hexavalent Chromium to Trivalent Chromium using *Saraca thaipingensis* Leaf Powder

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ABSTRACT

The need to find greener methods to remove hexavalent chromium [Cr(VI)] from contaminated water sources is on great demand. This research is conducted to evaluate whether *S.thaipingensis* able to reduce Cr (VI) to less toxic trivalent chromium [Cr (III)]. This experiment is done using diphenylcarbazide assay to detect its presence and evaluate the content of Cr (VI) before and after the dried *S. thaipingensis* leave powder is applied to the various concentration of chromium (Cr) solution. The mean concentration of total Cr, Cr III and Cr (VI) across concentrations of 1, 10, 20, 40, 60, 80, and 100 mg/L of Cr were subjected to One-Way ANOVA analysis and the means were significantly different from each other with significance level of 0.000. Based on the Tukey HSD test, although the mean concentration of Cr(III) and Cr(VI) adsorbed is significantly different with significance level of 0.000 and 0.015 respectively. From the mean concentration of total Cr (26.366), the Cr (VI) (15.838) still dominates the Cr(III) (10.528). The *S. thaipingensis* leaf powder is shown to have a fixed reduction of 20 -40% and it does not change across Cr (VI) concentrations of 1, 10, 20, 40, 60, 80, and 100 mg/L.