

**Phytoremediation of gold mine tailings amended with iron-coated and uncoated burnt rice husk by vetiver grass (*Vetiveria zizanioides* L.)**

**ABSTRACT**

This study was undertaken to determine the effects of rice husk ash (RHA) and iron-coated rice husk ash (Fe-RHA) on phytoavailability of As, Cd, Cr, Cu, Mn, Pb, and Zn to vetiver grass grown in gold mine tailings amended with either RHA or Fe-RHA at 0%, 5%, 10%, and 20% (w/w). The results showed that the RHA amended tailings recorded higher concentration of As in the shoot and the root and higher concentration of Cr and Mn in the root compared to the untreated tailings which was used as a control. The biological accumulation coefficient (BAC) and bioconcentration factor (BCF) values of the vetiver grass for As and Zn increased with RHA application rate but the biological transfer coefficient (BTC) values of As and Zn were decreased. In Fe-RHA amended samples, As concentration in the shoot and root concentrations of Cd and Zn were significantly higher compared to the control. The Fe-RHA treated samples had lower BAC and BTC values for As and Zn than the control. However, the BCF values for those elements were higher than the control. The concentration of Pb was not detected in any of the samples.