

PHYTOREMEDIATION OF ARSENIC FROM MINE WASTE BY *JATROPHA CURCAS*

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ABSTRACT

The increasing activities of mining industries had led to an increasing number of mine tailings. Mine tailings containing a high concentration of heavy metal such as arsenic generated from the refining process contributes to the pollution of the environment and brings harmful effects to human health. Phytoremediation is an emerging technology that adopts the ability of the plant to accumulate heavy metals for remediation of the environment. *Jatropha curcas* was chosen as a candidate in this work due to its potential in accumulating heavy metals in its tissues and consequently could remediate the polluted area. The concentration of arsenic in the root and leaf tissues were analysed after the plants were planted in the tailings for one month. The accumulation of arsenic was higher in the root tissues compared to leaf tissue. Furthermore, the translocation factor (TF) of *Jatropha curcas* was detected around 0.010 to 0.015. The arsenic reduction in the tailings is about 80% after the remediation. Overall, this work may provide a preliminary inference on the *Jatropha curcas* in phytoremediation of arsenic from mine tailings.

Keywords: *Jatropha curcas*; mine tailings; phytoremediation; arsenic

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