

POTENTIAL REHABILITATION AND PHYTOREMEDIATION OF BARREN BAUXITE MINING SITES BY *JATROPHA CURCAS*

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ABSTRACT

Recent bauxite mining activities in Kuantan have raised public concerns including environmental and health issues, such as poor soil quality, soil erosion and dust pollution; which eventually leads to health problems such as asthma, allergy and cough. Barren bauxite mines were left without vegetations, making soil erosion problems becoming worse. The potential of *Jatropha curcas*, a non-edible biodiesel producing plant in rehabilitating and remediating barren bauxite mining sites need to be investigated and further studied. The objective of this research is to investigate the effects of planting *J. curcas* on bauxite-mined soil. Growth performance of *J. curcas* before and after planting on bauxite-mined soil was observed by periodic observations of the numbers of leaves, shoots length and root length; while heavy metal content of bauxite-mined soils was analysed each month using inductively coupled plasma mass spectrometry (ICP-MS). Based on the results obtained, *J. curcas* could thrive and grow on both topsoil and bauxite-mined soil. Soil pH levels also improved while heavy metal concentrations decreased after planting. Therefore, *J. curcas* is identified suitable for both revegetation and phytoremediation; thus, potentially can solve the environmental problems that arise on the bauxite-mined site.

Keywords: *Jatropha curcas*; bauxite-mined soils; rehabilitation; phytoremediation

Acknowledgement: We gratefully acknowledge the support received from all involved parties, including the financial support from the ministry (Grant ID: FRGS17-039-0605).