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Phytoextraction potential of *Manihot esculenta* Crantz. (Cassava) grown in mercury and gold containing biosolids and mine tailings

Hannah Joy P Alcantara^{1,2}, Augustine I Doronila¹ and Spas D Kolev¹

¹University of Melbourne, Australia

²University of the Philippines Diliman, Philippines

The potential of *Manihot esculenta* Crantz. (Cassava) to phytoextract Hg and Au from Hg- and Au-containing biosolids and mine tailings was investigated. Removal of Hg by a hyper-accumulating plant species offers new options to clean up Hg-contaminated sites and at the same time harvest trace amounts of Au. Pre-rooted cassava cuttings with 5-7 nodes were grown in different combinations of biosolids-amended mine tailings to evaluate the best combination that will support optimum plant growth. Cassava was established to grow best in the 75% biosolids and 25% mine tailings combination. Plant cuttings were also grown in hydroponics solutions amended with Hg and/or Au to determine root uptake of Hg and Au. Metals uptake was found to be greatest in the fibrous roots, accumulating up to 12.59 g kg⁻¹ Hg and 18.99 mg kg⁻¹ Au. Given its ease in cultivation and harvest as well as the high accumulation of Hg and Au in the roots, cassava is a suitable candidate for Hg remediation and Au recovery from biosolids and mine tailings containing these metals.

h.alcantara@student.unimelb.edu.au