



Presented at the DLSU Research Congress 2014
De La Salle University, Manila, Philippines
March 6-8, 2014

Phytoremediation Potential of Tomato (*Lycopersicon esculentum Mill*) in Artificially Contaminated Soils

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Abstract: This study investigated the uptake and distribution of heavy metals in tomato (*Lycopersicon esculentum Mill*) in artificially contaminated soil. The seeds were germinated in trays filled with typical farm soil and at its third truly leaf, transplanted in soil pots contaminated with low and high levels of copper, iron, cadmium and nickel. The elemental distributions of the heavy metals in the plant organs were determined after harvesting stage. The uptake and distribution of the three heavy metals Fe, Cd and Ni were accumulated in the different organs of tomato in decreasing pattern of root>stem>leaf>fruit, while Cu has root>fruit>stem>leaf order were observed. This pattern of distribution in the plant organ exhibit the typical pattern of an excluder plant with higher concentration of metals accumulated in the roots than in the shoots. The decreasing pattern of the bioconcentration factor (BCF) showed that the ability of tomato to accumulate heavy metals was reduced as the level of contamination is increased.

Key words: tomato, heavy metals, elemental distributions, bioconcentration factors (BCF)