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POTENCY OF DIETHILENE TRIAMINE PENTA ACETIC ACID TO IMPROVE CU ABSORPTION BY *CROTALARIA JUNCEA* FROM SOIL CONTAMINATED ELECTROPLATING WASTE

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Abstract: This study aims to determine the effect of adding $CuSO_4$ and DTPA (diethilene triamine penta acetic acid) on the soil against Cu accumulation and growth of *Crotalaria juncea*. Soil taken at 0-20 cm layer of paddy fields contaminated electroplating wastewater Wonorejo village, District Ngunut, Tulungagung, East Java, Indonesia. *Crotalaria juncea* seeds germinated in sand for 2 weeks and transferred to pollybags containing soil contaminated electroplating wastewater. Each plants treated with various concentrations of $CuSO_4$ (0, 12.5, 45 and 75 $mg.L^{-1}$) and various concentrations of DTPA 0, 0.5, 1 and 5 $mM.kg^{-1}$. Analysis was then performed on the Cu content of the soil and plants (roots and shoots) by AAS method at a wavelength of 324.8 nm. Root length, plant height, and dry weight of *Crotalaria juncea* were also measured. Results show the addition of $CuSO_4$ and DTPA in soil media, have a significant influence on the accumulation of Cu by *Crotalaria juncea*. Concentration of DTPA 5 $mM.kg^{-1}$ have significant effect on accumulation of Cu. Addition of $CuSO_4$ and DTPA have a significant effect on the plant height but additon of DTPA in the soil have not significant effect on root length and dry weight of *C. juncea.*

Keywords: *Crotalaria juncea*, Cu accumulation, diethilene triamine penta acetic acid, electroplating wastewater

INTRODUCTION

Metal coating industry uses a wide range of chemicals for the process include various acids, bases and various chemical compounds such as chromate, cyanide, chloride and phosphate, produces waste material in the form of solids, liquids and hazardous gases. In addition it also wastes containing heavy metals. Although the amount of waste generated is not as much waste from other industries, but because it is highly toxic waste it is extremely dangerous to humans and can be life threatening biota in the vicinity, before being discharged to the outside of the plant must be processed first. As an illustration may be mentioned that the composition of the