ABSTRACT

ANDIN SETYANINGRUM. Evaluation of Cu, Zn, Pb and Cd Contamination in Agricultural Land at Tangerang, Province of Banten. Under direction of SYAIFUL ANWAR and ISKANDAR.

Tangerang is one of the Indonesia’s capital buffer which can be categorized as an industrial city. The existence of industries has positive impacts for the regional economy, but also has negative impacts on the environment quality, such as an increase of heavy metals concentration in agricultural soils. This study was aimed to evaluate the levels of concentration and contamination/pollution status of Cu, Zn, Pb, and Cd in agricultural soils in Tangerang, in order to obtain an overview of the quality of the agricultural land in Tangerang. Soil and rice grain sampling was conducted in 13 villages. The parameters analyzed were soil texture, pH, organic C, CEC and total Cu, Zn, Pb, and Cd concentrations in soil and rice grain. Based on the physical and chemical properties, the soil has a texture of clay and silty clay loam, with pH of 4.7-6.4, organic C of 0.51-1.98 % and CEC of 8.67-26.62 cmol(+)/kg. Agricultural soils in Tangerang contained total Cu in the range of 23.9 to 44.7 mg/kg, total Zn 38.0-117.0 mg/kg, total Pb 12.8-90.6 mg/kg and total Cd 0.1-0.3 mg/kg. The rice grains sampled from the paddy fields of the corresponding area already contained Cu 2.28-10.00 mg/kg, Zn 18.15-75.00 mg/kg, Pb 0.11-7.68 mg/kg and Cd 0.01-0.10 mg/kg. Based on the value of contamination/pollution index the agricultural soils in Tangerang has been contaminated by heavy metals Cu, Zn, Pb and Cd at slight to very severe contamination levels.

Keywords: soil contamination, Cu, Zn, Pb, Cd, c/p index.