

ABSTRACT

Diana, Nur . 2013. **Potential bacteria *Enterobacter agglomerans* As Biosorben Heavy Metal Lead (Pb)** . Thesis , Department of Biology, Faculty of Science and Technology of the State Islamic University of Maulana Malik Ibrahim Malang . Supervisor : (I) Dr . Retno Susilowati , M. Si (II) Dr . H. Munirul Abidin , MA .

Keywords : Heavy Metal Lead (Pb) , Biosorben , *Enterobacter agglomerans* .

Wastewater containing heavy metal lead (Pb) can have negative impacts on the environment , such as water pollution . Solutions to address water pollution containing heavy metals is biosorpi . Biosorption is the utilization of technology uptake by microorganisms such as bacteria . One of the resistant bacteria and heavy metals are capable of accumulating *Enterobacter agglomerans* . The purpose of this study was to determine the effect of heavy metal lead (Pb) on the growth of *E. agglomerans* and to determine the ability of *E. agglomerans* in reducing heavy metal concentrations of lead (Pb) .

This research is an experimental study using a study design completely randomized design (CRD) with 5 treatments and 3 replications . Bacteria *E. agglomerans* cultured in LB medium and standard growth curves calculated with the TPC method regressed with OD values at a wavelength of 600 nm using the equation $y = ax + b$. Observation of bacterial growth with concentrations of heavy metals lead 0 , 5 , 10 , 15 and 20 ppm calculated by looking at the value of OD every 4 hours to 28 hours , the peak phase of the log data is analyzed with ANOVA SPSS 16 program . To determine the concentration of heavy metals are absorbed lead , test Spektrofotometry Atomic Absorption (AAS) with data capture growth in the most optimum outcome than controls.

The results showed that the bacterium *E. agglomerans* potential as biosorben heavy metal lead (Pb) . This is evidenced by the effect of lead on the growth of the bacteria *E. agglomerans* . Highest bacterial growth at 0 ppm and the lowest at 20 ppm treatment . Bacteria *E. agglomerans* was also able to reduce heavy metal concentrations of lead in liquid media by 96 % in the treatment of 5 ppm .